108 The method according to claim 81 wherein said active matrix display device is a liquid crystal device.

109. The method according to claim 86 wherein said active matrix display device is a liquid crystal device.--

REMARKS

In response to the Office Action claims 1, 6 and 11 have been amended. Accordingly, claims 1-4, 6-9, 11-14 and 16 are currently pending.

The undersigned wishes to thank the Examiner for the courtesies extended in the telephonic interviews of July 15, 2002 and July 23, 2002 and the personal interview of July 16, 2002.

Claims 1, 6 and 11 have been amended in the manner as agreed upon in the above-referenced interviews. Hence, Applicant respectfully submits that the rejections of paragraphs 1-7 of the Office Action dated August 10, 2001 are withdrawn by the Examiner. Accordingly, the present response will address only the rejections set forth in paragraphs 8-14 of the August 10, 2001 Office Action.

Claims 1-4, 6-9, 11-14 and 16 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 5-15 of U.S. Patent No. 4,786,358 to Yamazaki et al. in view of U.S. Patent No. 4,680,855 to Yamazaki et al. and Japanese Patent No. 403024259 to Toshiba KK or European Patent Application No. 209131 to NEC Corp. or Japanese Patent document 2,174,123 to NEC Corp. or U.S. Patent No. 4,915,981 to Traskos et al. or U.S. Patent No. 4,444,801 to Hongo et al. or U.S. Patent No. 4,784,963 to Krimmel et al.

Amended claim 1 recites a method for treating an object with a laser comprising the steps of emitting a laser beam from the laser and expanding the laser beam in a first direction so as to increase a first cross-sectional dimension of the laser beam to form an expanded laser beam. A peripheral portion of the expanded laser beam is then removed through a mask to form a masked laser beam. The peripheral portion includes at least edges of the expanded laser beam extending in the first direction. Next, the masked laser beam is condensed in a second direction orthogonal

to the first direction after removing the peripheral portion so as to decrease a second cross-sectional dimension of the masked laser beam to form a condensed laser beam. The second cross-sectional dimension is orthogonal to the first cross-sectional dimension and the condensed laser beam has a line-shaped transverse cross-section at the object.

Amended claim 6 recites a method for treating an object with a laser comprising the steps of emitting a rectangular-shaped laser beam from the laser and expanding the laser beam in a first direction so as to increase a first cross-sectional dimension of the laser beam to form an expanded laser beam. A peripheral portion of the expanded laser beam is removed through a mask to form a masked laser beam. The peripheral portion includes at least edges of the expanded laser beam extending in the first direction; and condensing the masked laser beam in a second direction orthogonal to the first direction after removing the peripheral portion so as to decrease a second cross-sectional dimension of the masked laser beam to form a condensed laser beam, the second cross-sectional dimension being orthogonal to the first cross-sectional dimension and the condensed laser beam having a line-shaped transverse cross-section at the object.

Amended claim 11 recites a method for treating an object with a laser comprising the steps of emitting a laser beam from the laser and expanding the laser beam in a first direction so as to increase a first cross-sectional dimension of the laser beam to form an expanded laser beam. A peripheral portion of the expanded laser beam is removed through a mask to form a masked laser beam. The peripheral portion includes at least edges of the expanded laser beam extending in the first direction. The masked laser beam is then condensed in a second direction orthogonal to the first direction so as to decrease a second cross-sectional dimension of the masked laser beam to form a condensed laser beam. The second cross-sectional dimension is orthogonal to the first cross-sectional dimension and the condensed laser beam has a line-shaped transverse cross-section at the object. Next, the relative location of the object with respect to the laser beam is changed so that the object is scanned with the laser beam.

None of the cited prior art, either alone or in combination disclose or suggest the claimed steps of "expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam"; "removing a peripheral portion of said expanded laser beam"; and "condensing said masked laser beam in a second direction...so as to decrease a second cross-sectional dimension of said masked laser beam," as recited in amended independent claims 1, 6 and 11.

Applicants' claimed invention is not merely an obvious variation of the claims of the '358 patent in view of any of the numerous cited secondary references. Therefore, Applicants respectfully submit that claims 1-4, 6-9, 11-14 and 16 are allowable over the cited prior art.

Claims 1-4, 6-9, 11-14 and 16 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 5-15 of U.S. Patent No. 4,786,358 to Yamazaki et al. in view of Japanese Patent No. 403024259 to Toshiba KK or European Patent Application No. 209131 to NEC Corp. or Japanese Patent document 2,174,123 to NEC Corp. or U.S. Patent No. 4,915,981 to Traskos et al. or U.S. Patent No. 4,444,801 to Hongo et al. or U.S. Patent No. 4,784,963 to Krimmel et al.

For the reasons set forth above, claims 1-4, 6-9, 11-14 and 16 are allowable over the cited prior art.

Claims 1, 3, 4, 6, 8, 9, 11, 13, 14 and 16 have been rejected under 35 U.S.C. § 102(b) as being clearly anticipated by the translation of JP 57-94482 to Hongo et al.

Hongo does not disclose or suggest the claimed steps of "expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam"; "removing a peripheral portion of said expanded laser beam"; and "condensing said masked laser beam in a second direction...so as to decrease a second cross-sectional dimension of said masked laser beam," as recited in amended independent claims 1, 6 and 11.

Hongo teaches expanding a circular shaped laser beam into an elliptical shaped laser beam and the resulting beam does not have "a line-shaped transverse cross-section," as recited in the claims. Therefore, Applicants respectfully submit that the claims are allowable over the cited prior art.

Claims 2, 7 and 12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Hongo et al.

For the reasons set forth above, Hongo does not disclose or suggest the claimed subject matter. Applicants respectfully submit that claims 2, 7 and 12 are allowable over the cited prior art.

Claims 1-4, 6-9, 11-14 and 16 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 5-15 of U.S. Patent No. 4,786,358 to Yamazaki et al. in view of Hongo et al. (57-94482).

As fully set forth above, neither the '358 patent nor Hongo disclose or suggest the claimed steps of "expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam"; "removing a peripheral portion of said expanded laser beam"; and "condensing said masked laser beam in a second direction...so as to decrease a second cross-sectional dimension of said masked laser beam," as recited in amended independent claims 1, 6 and 11. As the present invention as claimed is not obviated by the cited prior art, Applicants respectfully submit that the claims are allowable over the cited prior art.

Claims 1-4, 6-9, 11-14 and 16 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-44 of U.S. Patent No. 6,149,988 to Shinohara et al.

The claims of the '988 patent do not recite "expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam"; "removing a peripheral portion of said expanded laser beam"; and *then* "condensing said masked laser beam in a second direction...so as to decrease a second cross-sectional dimension of said masked laser beam," as recited in amended independent claims 1, 6 and 11.

Therefore, the present invention is distinct from that as set forth in the claims of the '988 patent and one having ordinary skill in the art would not be motivated to modify the claims of the '988 patent without the teachings of Applicants' present invention. For these reasons, claims 1-4, 6-9, 11-14 and 16 are allowable over the cited prior art.

Claims 1-4, 6-9, 11-14 and 16 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. RE 33,947 to Shinohara et al.

The claims of RE 33,947 do not recite "expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam"; "removing a peripheral portion of said expanded laser beam"; and *then* "condensing said masked laser beam in a second direction...so as to decrease a second cross-sectional dimension of said masked laser beam," as recited in amended independent claims 1, 6 and 11.

Therefore, the present invention is distinct from that as set forth in the claims of the RE 33,947 and one having ordinary skill in the art would not be motivated to modify the claims of RE 33,947 without the teachings of Applicants' present invention. For these reasons, claims 1-4, 6-9, 11-14 and 16 are allowable over the cited prior art.

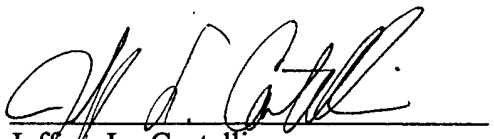
In summary, none of the cited prior art, either alone or in combination, discloses or suggests the claimed subject matter. Therefore, the application is in condition for allowance and a prompt passage to issuance is therefore earnestly solicited.

In addition, Applicant would like to add new claims 17-109. These new claims reside in the combination of a line-shaped laser beam and the use of an ion blocking film. The use of a line-shaped laser beam is very advantageous for treating a large area substrate (such as a glass substrate) for improving productivity. However, such a large substrate generally includes alkali ions. Therefore, the combination of a line-shaped laser beam and an ion blocking film for blocking alkali metals from the substrate is very advantageous for treating a large area substrate. Please note that these new independent claims do not recite the use of a mask for removing a peripheral portion of the laser beam.

It should also be noted that the ion blocking film does not appear to be supported by the earliest priority Japanese application No. 61-229252 filed on 9/26/86 and the earliest priority U.S. Application Serial No. 07/097,190 filed on 9/16/87. Also, some of the new claims are supported by the specification of the application Serial No. 07/288,186 filed on December 22, 1988 and some of the claims are supported by the specification of the subject application filed on December 20, 1993. Applicant wishes to clarify this issue at an interview to assist the Examiner.

To assist the Examiner, the new claims 17-60 are generally directed to a laser processing method while the new claims 61-96 are directed to a method of manufacturing an active matrix display device.

Respectfully submitted,



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MARKED-UP COPY OF AMENDED CLAIMS

1. (Twice Amended) A method for treating an object with a laser comprising the steps of:

emitting a laser beam from the laser;

expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam to form an expanded laser beam;

removing a peripheral portion of said expanded laser beam through a mask to form a masked laser beam, said peripheral portion including at least edges of said expanded laser beam extending in said first direction; and

condensing said masked laser beam in a second direction orthogonal to said first direction after removing said peripheral portion so as to decrease a second cross-sectional dimension of said masked laser beam to form a condensed laser beam, said second cross-sectional dimension being orthogonal to said first cross-sectional dimension and said condensed laser beam having a line-shaped transverse cross-section at the object.

6. (Twice Amended) A method for treating an object with a laser comprising the steps of:

emitting a rectangular-shaped laser beam from the laser;

expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam to form an expanded laser beam;

removing a peripheral portion of said expanded laser beam through a mask to form a masked laser beam, said peripheral portion including at least edges of said expanded laser beam extending in said first direction; and

condensing said masked laser beam in a second direction orthogonal to said first direction after removing said peripheral portion so as to decrease a second cross-sectional dimension of said masked laser beam to form a condensed laser beam, said second cross-sectional dimension being orthogonal to said first cross-sectional dimension and said condensed laser beam having a line-shaped transverse cross-section at the object.

11. (Twice Amended) A method for treating an object with a laser comprising the steps of:

emitting a laser beam from the laser;

expanding said laser beam in a first direction so as to increase a first cross-sectional dimension of said laser beam to form an expanded laser beam;

removing a peripheral portion of said expanded laser beam through a mask to form a masked laser beam, said peripheral portion including at least edges of said expanded laser beam extending in said first direction;

condensing said masked laser beam in a second direction orthogonal to said first direction so as to decrease a second cross-sectional dimension of said masked laser beam to form a condensed laser beam, said second cross-sectional dimension being orthogonal to said first cross-sectional dimension and said condensed laser beam having a line-shaped transverse cross-section at the object; and

changing the relative location of said object with respect to said laser beam so that said object is scanned with said laser beam.